

APPARATUS AND METHOD FOR FRICTION STIR WELDING  
WITH A VARIABLE SPEED PIN

ABSTRACT OF THE DISCLOSURE

An apparatus and method for forming a friction stir weld joint in a workpiece are provided. The apparatus includes a friction stir welding tool having a shoulder and a rotatable pin extending therefrom. The rotational speed of the pin can be adjusted during a friction stir welding operation, e.g., cyclically and/or according to a predetermined schedule, so that the pin mixes the plasticized material of the workpiece. The workpiece can also be preheated before friction stir welding.

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